

Comments on Draft Permit

Issue: Total Maximum Load (Daily, Monthly, Quarterly, Annual) and Chloride Limits are inadequate to maintain and protect chloride limitations for agriculture, riparian vegetation and wildlife, and eventually potable uses.

Background

The permit and analyses provided do not provide sufficient and adequate basis for developing the TMDL for the Project discharges, summertime irrigation, and long-term degradation of the groundwater and eventually the surface waters downstream of the Project, the reach, or even the basin.

Attach. F, III.E.6, TMDL-Chlorides

6. Relevant Total Maximum Daily Loads - A Total Maximum Daily Load (TMDL) is a determination of the amount of a pollutant, from point, non-point, and natural background sources, including a margin of safety that may be discharged to a water quality-limited water body. Section 303(d) of the CWA established the TMDL process. The statutory requirements are codified at 40 CFR, Part 130.7. TMDLs must be developed for the pollutants of concern, which impact the water quality of water bodies on the 303(d) list. The Regional Water Board has developed a TMDL that assesses the extent and sources of the ammonia and algae (nutrient/nitrogen) problems in the Santa Clara River. According to the TMDL schedule, under the amended consent decree, *Heal the Bay, Santa Monica Bay Keeper, et al. v. Browner, et al.* (March 23, 1999), the nitrogen and chloride TMDLs for the Santa Clara River must be completed by 2004 and 2003, respectively. The coliform TMDL was scheduled for completion by 2006.

a. Chloride TMDL.

- i. On October 24, 2002, the Regional Water Board adopted Resolution No. 2002-018, *Amendment to the Basin Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load to Reduce Chloride Loading in the Upper Santa Clara River*. Soon after, the Regional Water Board submitted the TMDL to the State Water Board for approval. On February 19, 2003, the State Water Board adopted Resolution No. 2003-0014, the "Remand Resolution," finding that the Regional Water Board staff prepared the documents and followed procedures satisfying environmental documentation

Chlorides do not metabolize, degrade, or evaporate and thereby all salts imported to the basin add to the total salts within the basin and can only be exported by physical transport by human activities or discharge through surface and groundwater regime to the sea.

Salt will accumulate into the soil until leached downward through surface/vadose zones
Leaching of salt through the zones will move salts to groundwater tables which will be
subject to downslope transport

Increased salts in groundwater will increase salt content of groundwater discharge to
base-flow of SC River and thereby increased salts (including chlorides) in baseflows

Simplified Numerical Model

Irrigation of 0.5in/day x 200d = 100inches equivalent

= 100% evaporation of liquids and

= 100% total deposition of included dissolved salts and chlorides in soils

Treatment Requirements = 100mg/L for discharge of 10mm/day evaporation rates

Assuming that RO is used 100% of time

10mm x >200d = >2000mm/sq mm surface (=>2.0 cu m/sq m per annual irrigation)

2.0cum/yr x 0.1g/L = 200g/sqm/yr,

2,000,000 gal x 250ppm chloride x 365d = 500 gal of 100% brine / day
182,500 gal/yr of brine imported to basin

Rainfall = 15 inches dilution 15 Rain/100 Irr = 1/7 per year

Site Geological Aspects

The noticeable bedrock ridges on the north and south of the SC River channel and floodplain would suggest that groundwater upstream of the point of discharge may be confined in such a manner as to promote upwelling discharges from the groundwater table into the channel through this gap and then a recharging of the groundwater table in the downstream floodplain area.

Requests: We request that the WRB review/revise current drafts as below:

1. Current TMDL for chlorides within the Santa Clara Basin based on the long-term accumulation and non-degradation of chlorides in soil, groundwater, and surface water and probable need for export of rock salts from the basin;
2. A new integrated plan element for the disposition of salts be developed and applied to the proposed project;
3. Discharge limits to soil for landscaping (groundwater) and to open channel (surface water) shall be identical;
4. Receiving surface water monitoring shall be based on the unaffected flow (upstream and up-groundwater flow) at one site upstream/upflow approximately 10x the width of the SC River at/above the point of discharge and the affected flows two downstream/downflow sites approximately 10x the width of the SC River at/below the point of discharge;
5. Receiving ground water reporting shall be based on the unaffected flow (upstream and up-groundwater flow) at one site upstream/upflow approximately 10x the width of the SC River at/above the point of discharge and the affected flows two downstream/downflow sites approximately 10x the width of the SC River at/below the point of discharge;
6. Total residential, commercial, and industrial prohibition on use of sodium/chloride deionization or ion-exchange or reverse osmosis systems any where in the collection system without a permit of the SD;

7. Total residential, commercial, and industrial prohibition on discharges from any sodium/chloride deionization or ion-exchange or reverse osmosis systems any where in the collection system with fines of >\$1000/d for use or discharges there of within the SD;
8. Further geohydrological investigations shall be required to establish the groundwater/surface water relationship for a distance of at least 10,000 ft.

TERTIARY TREATMENT

Issue: The draft permit does not clearly or definitive describe treatment levels and process consistent with the technology and usual levels and thereby suggests that treatment process may be seasonably changed.

Background:

Definitions

Non-Numeric

“Advanced treatment of wastewater that goes beyond the secondary or biological stage. It removes nutrients such as phosphorous and nitrogen and most BOD, suspended solids, and provides additional disinfection.”

“recycled [treated] water includes secondary effluent that has undergone tertiary treatment and has been disinfected to a level such that the median number of coliform bacteria in the water does not exceed 2.2 per 100 mL.”

“Title 22 defines the tertiary treatment process as wastewater that has been oxidized, coagulated, clarified, and filtered. “

Numeric

Secondary 30/30 mg/L, BOD₅ and TSS

Tertiary 10/10

Membrane and Reverse Osmosis: 5/5

Turbidity

Operationally turbidity is usually a continuous or very rapid control parameter and may act a surrogate indicator for BOD/TSS but is not included. Tertiary treated effluent should not exceed 2.0 NTU average, not exceed 5.0 NTU \leq 5% of operating time during any 24-hour period, and never exceed 10 NTU (0.001% of the time).”

Draft Permit

II. Findings

A. Background. Newhall Land and Farming Company (Newhall Land) submitted a Report of Waste Discharge (ROWD), dated April 23, 2004, and applied for a National Pollutant Discharge Elimination System (NPDES) permit authorization to discharge up to 2 MGD of tertiary treated wastewater from a new privately owned treatment works that would treat the sewage generated

F. Technology-based Effluent Limitations. The Code of Federal Regulations (CFR) at 40 CFR Section 122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on tertiary treatment or equivalent requirements that meet both the technology-based secondary treatment standards, at 40 CFR Part 133, for POTWs and protect the beneficial uses of the receiving waters. The

IV. Limitations

1. **Final Effluent Limitations – Discharge Point 001**

- a. The discharge of tertiary-treated effluent shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, RSW-001U, and RSW-002D as described in the attached Monitoring and Reporting Program (Attachment E):

Table 7. Effluent Limitations

Parameter	Units	Average Monthly	Average Weekly
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	20	30
	lbs/day ¹	330	500
Total Suspended Solids	mg/L	15	40
	lbs/day ¹	250	670

- b. **Percent Removal:** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

This does not comply with tertiary treatment and introduce confusion and opens operations to other limits: $0.15 \times 300\text{mg/L} = 45 \text{ mg/L}$ for both BOD and TSS.

Requests: We request that the WRB review/revise current drafts as below:

1. Use membrane and reverse osmosis required 100% of the time for both land and channel applications/discharges. Treatment shall not be varied seasonally or based on flows or evaporation;
2. Discharges shall comply with the rated capability of membrane bioreactors and reverse osmosis, <10/10mg/L maximum observed for BOD and TSS, median levels of 5/5 mg/L;
3. Monthly averages shall be based on tests or monitoring of ≥ 10 samples or instances, and weekly averages shall not be based on <7 individual day samples or tests;
4. All discharge (including also receiving water) monitoring and levels shall include discharges to both ground and surface waters, and groundwater discharges shall be monitored through the discharge points of the fixed irrigation or hydrants;
5. Operations shall monitor turbidity levels on an hourly basis and shall provide treated effluents not exceeding 2.0 NTU average, not exceeding 5.0 NTU $\leq 5\%$ of operating time during any 24-hour period, and never exceed 10 NTU (0.001% of the time);
6. Bypassing shall be allowed for the first five years of operations (including commissioning, running-in, and build-out of the Phase 1), and the Phase 1 facilities shall be provided with a detention ponds for one-day discharges during the first five years to receive any non-compliant bypassing or discharge and to allow return of bypassed liquids to process streams for compliant treatment.

COMMISSIONING, STARTUP, AND PHASE1 BUILD-OUT DISCHARGES

Issue: The draft permit does not clearly or definitively describe early operations controls when typically non-compliant process-upsets and discharges may occur. As a new facility and allowing for greater expansions (tripling), the first three years are critical to establishing controls and operational averages and startup-operators training.

Background:

General observations with numerous references to non-applicability of standard sections indicate that the "new facility" should have its operational plan as part of the permit. Because of its build-out (initial permit) period of five years, many non-compliant conditions can be assumed.

Draft Permit Conditions

III. Discharge Prohibitions

- C. The bypass or overflow of untreated wastewater or wastes to surface waters or surface water drainage courses is prohibited, except as allowed in Standard Provision I.G. of Attachment D, Federal Standard Provisions.

IV. Limitations

2. Interim Effluent Limitations

- a. Interim Effluent Limitations are not applicable for new dischargers.

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum

B. Land Discharge Specifications

[Not Applicable. Holding ponds at the Newhall Ranch WRP will be concrete-lined and are not designed for purposeful groundwater recharge.]

Permit Sec. C.1

C. Special Provisions

1. Reopener Provisions

- a. This Order may be modified, revoked and reissued, or terminated for cause, including, but not limited to:
- (1) Violation of any term or condition contained in this Order;
- d. The Board may modify, or revoke and reissue this Order if present or future investigations demonstrate that the discharge(s) governed by this Order will cause, have the potential to cause, or will contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

Permit Sec. C.2.a Treatment Plant Capacity

The Discharger shall submit a written report to the Executive Officer of the Regional Water Board within 90 days after the "30-day (monthly) average" daily dry-weather flow equals or exceeds 75 percent of the design capacity of waste treatment and/or disposal facilities. The Discharger's senior administrative officer shall sign a letter, which transmits that report and certifies that the discharger's policy-making body is adequately informed of the report's contents. The report shall include the following:

- (1) The average daily flow for the month, the date on which the peak flow occurred, the rate of that peak flow, and the total flow for the day;
- (2) The best estimate of when the monthly average daily dry-weather flow rate will equal or exceed the design capacity of the facilities; and
- (3) A schedule for studies, design, and other steps needed to provide additional capacity for waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present units.

This requirement is applicable to those facilities which have not reached 75 percent of capacity as of the effective date of this Order. For those facilities that have reached 75 percent of capacity by that date but for which no such report has been previously submitted, such report shall be filed within 90 days of the issuance of this Order.

Requests: As indicated in Tertiary Treatment comments, we request that the WRB review/revise current drafts as below:

1. Start-Up Report shall be presented within 30 days of issuance of the Order and shall be updated on a monthly basis for the first year and quarterly thereafter for the first five years of operations;
2. Require Year 1, Year 1-2, and Year 1-3 screening, MBR, and UV disinfection parameters for new discharges;
3. Tripling sampling/testing numbers per unit time and incorporate online, real-time operations monitoring parameter indicative of the primary parameters (e.g., COD, TOC, ReDox, Turbidity, etc.);
4. Require concrete-lined ponds for receiving/returning of non-compliant flows from/to processes.

Issue: Editing and Consistency

Background:

ToC, p.3

Sec. V is included under Sec. IV in ToC
No ToC reference to Sec. I-O, pg. 36-38

Tables

Table 1-4 precede the ToC

Table 5 is on p.7 not 8

Table 6 does not exist and not on p.10

Table 7 starts on p.13, not p.15, but does continue and ends on p.15

Tables 8 and 9 do not exist

Attachment G comes after Attachment H

Request: We request that the WRB edit/review/revise current draft

Issue: Arbitrary or unenforceable conditions - IV.A.1.a, p.13, Footnote 1

Background:

- ¹ The mass emission rates are based on the plant design flow rate of 2.0 mgd, and are calculated as follows:
 $\text{Flow(MGD)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)} = \text{lbs/day}$. However, the design capacity will incrementally increase to 6.8 MGD, as the phased plant upgrades approach completion. The mass-based effluent limitation will accordingly be modified upon certification and approval of increased treatment plant capacity. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

Conditions which may prove to be unenforceable will detract from those which are enforceable; requirements can only be met, only if they are do-able, measurable, and enforced.

The footnote does not define what “wet-weather storm events” means in order to define concentration monitoring requirements during the duration of a “wet-weather storm events”, compared to mass-based monitoring immediately after or before for NON-“wet-weather storm events” monitoring conditions.

The change of monitoring has little value. As no or minimal inflow/infiltration would enter the sewers, mass-based could be continued for effluent.

Request: We request that the WRB review/revise and specify “wet-weather storm events”

- Rainfall (inches within a X hour period) within the basin or upstream of the discharge;
- Quarterly period “rainy season” (15 November to 15 April); or
- Stream flow (>lower 25%ile of flow).

and add definition to Attachment A.

Issue: Process/Tertiary/Standards contradictions

Background:

- b. **Percent Removal:** The average monthly percent removal of BOD 5-day 20°C and total suspended solids shall not be less than 85 percent.

Typical sewage of 300 mg/L BOD/TSS x 85% removal (=15% discharged) = 45mg/L effluent, average monthly (?). and exceeding table values.

All tertiary treatment and MBRs have far higher removal/lower discharge levels than that indicated, and such inclusion appears to conflict or confusion.

Request: We request that the WRB review/revise current drafts and change from **85%** removal to **95%** removal and add "on a daily basis (third standard deviation above median) ".

Issue: Receiving Water limits and monitoring frequencies (weekly grabs) are not integrated and do not reflect probable diurnal changes of temperature, algae, turbidity, and DO.

Background:

V.A, p.18

3. The dissolved oxygen in the receiving water shall not be depressed below 5 mg/L as a result of the wastes discharged.

Monitoring by weekly grab samples would not reflect anticipated diurnal changes and those reflected in a meandering, shallow, multi-channel wash where diurnal temperatures and night-depression would "naturally" depress levels below 5 mg/L.

5. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits, as a result of wastes discharged:

Weekly (single) grabs for turbidity would not be sufficient to document changes of turbidity induced in the receiving water by other than massive discharge of suspended solids or nutrients. Changes in algae turbidity could easily change or influence the application of either the 10 or 20% changes condition.

Request: We request that the WRB review/revise current draft to provide a single table of all numeric parameters and limits along with their sampling locations (directly referencing Attachments B and C) and frequencies.

Issue: Monitoring elements - frequencies (continuous, instantaneous, daily, weekly, monthly, quarterly, etc.) and types of samples (continuous, grab, composites) bear little relationship to statistical applications (average, median, CoV, SE, etc.) -

Background:

No average, median, or other statistical valid number can be derived from a single “grab” sample, especially for turbidity, DO, etc.).

24-hour composites (thereby include the diurnal variations – night/day) presumably may equal hourly samples (or six 4-hr samples, or four 6-hr samples, etc.) but no sampling protocol /standard methods is referenced.

Monthly levels of one sample can not provide any statistically valid values.

Chlorine residual monitoring is based on a daily grab sample, while the limit is a daily maximum, thus such compliance is only based on a single instance which could be timed for least residual, after a month of operations, flows, and chlorine use (if used) , the operator could easily time the sampling for the lowest residual period.

Request: We request that the WRB review/revise current draft as below:

All values and sampling frequencies reviewed/revise by a qualified statistician, experienced in biostatistical ecology.

All “average” criteria and compliance shall be based on upper third standard deviations of more than ten samples, not on “averages” (weighted or unweighted).

All criterion-concentration level, e.g., 5.0 mg/L for DO downstream, shall have appropriate statistical parameters for application, the upper third standard deviation or the absolute limit.

Adequate statistical sampling procedure/protocol/numbers are required for meaningful statistical application (>10 values for an “average”) and replace “grab” with “grabs” (numbers to be determined by standard sampling/number methods (could be as low as three and as high as 15).

Issue: Monitoring and limits are not consistent.

Background:

Effluent Limits

Table 7. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	20	30	45	--	--
	lbs/day ¹	330	500	750	--	--
Settleable solids	mL/L	0.1	--	0.3	--	--
Oil and grease	mg/L	10	--	15	--	--
	lbs/day ¹	170	--	250		
Total dissolved solids	mg/L	1000	--	--	--	--
	lbs/day ¹	16,700	--	--	--	--
Chloride	mg/L	100 ²	--	--	--	--
	lbs/day ¹	1,700	--	--	--	--

Table 3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Reporting Level, units), respectively
Total waste flow	mgd	recorder	continuous ⁴	4
Turbidity ⁷	NTU	recorder	continuous	⁵
Total residual chlorine	mg/L	grab	daily ⁶	⁵
Temperature	°F	grab	daily	⁵
pH	pH units	grab	daily	⁵
Settleable solids	mL/L	grab	daily	⁵
Suspended solids	mg/L	24-hour composite	weekly	⁵
BOD ₅ 20°C	mg/L	24-hour composite	weekly ⁹	⁵
Oil and grease	mg/L	grab	monthly	⁵
Dissolved oxygen	mg/L	grab	weekly	⁵
Total dissolved solids	mg/L	24-hour composite	monthly	⁵
Chloride	mg/L	24-hour composite	monthly	⁵

All values are based on average rather than medians or third-standard deviations.
24-hour composites should be specified as 24 hourly composite(d) samples.

BOD Influent monitoring on 24-hour/daily basis and effluent on a weekly 24-hour basis, while BOD limits are set for daily, weekly, and monthly.

Daily limit on Oil/Grease but only monthly grab sampling

No Turbidity Effluent Limit (daily, weekly, or monthly) but continuous monitoring

Settleable Solids monitoring is based on a daily grab sample, while the limit is a daily maximum, thus such compliance is only based on a single instance which could be timed for least residual, after a month of operations, flows, and turbidity values, the operator could easily time the sampling for the lowest residual period, nighttime flows.

Table 2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	recorder	continuous ¹	2
pH	pH unit	grab	daily	2
Total suspended solids	mg/L	24-hour composite	daily	2
BOD ₅ 20°C	mg/L	24-hour composite	daily	2

BOD/TSS removal monitoring on 24-hour/daily basis for influent and on a weekly 24-hour basis for effluent.

Effluent Limits

Copper	µg/L	15	--	31	--	--
	lbs/day ¹	0.25	--	0.52	--	--
Lead	µg/L	7.8	--	16	--	--
	lbs/day ¹	0.13	--	0.27	--	--
Mercury	µg/L	0.051	--	0.10	--	--
	lbs/day ¹	0.00085	--	0.0017	--	--
Nickel	µg/L	100	--	--	--	--
	lbs/day ¹	1.7	--	--	--	--
Selenium	µg/L	4.1	--	8.2	--	--
	lbs/day	0.068	--	0.14	--	--
Zinc	µg/L	5000	--	--	--	--
	lbs/day ¹	83	--	--	--	--
Cyanide	µg/L	4.1	--	8.9	--	--
	lbs/day ¹	0.068	--	0.15	--	--

Monitoring

Copper	µg/L	24-hour composite	monthly	2
Lead	µg/L	24-hour composite	monthly	2
Mercury	µg/L	24-hour composite	monthly	2
Selenium	µg/L	24-hour composite	quarterly	2
Silver	µg/L	24-hour composite	quarterly	2
Thallium	µg/L	24-hour composite	quarterly	2
Zinc	µg/L	24-hour composite	quarterly	2
Cyanide	µg/L	grab	quarterly	2
Acrylonitrile	µg/L	grab	quarterly	2

Metals and Acrylonitrile have maximum daily limits while not having any effective "daily" sampling/monitoring.

Request: We request that the WRB review/revise current draft as below:

Review all parameters, levels, frequencies and revise accordingly.
Correlate influent/effluent so that derived values are based on consistent monitoring.
Add Chemical Oxygen Demand or Reduction/Oxidation Potential with recorders and continuous sampling for influent and effluent and removal efficiencies (operational parameter).
Distinguish between process related monitoring and effluent monitoring,
Add turbidity to the effluent limits.
Eliminate grab and replace with recorders or composite samplers.

Issue: Compliance shall be appropriate to the degree of enforcement and penalties to violators (as has been demonstrated by the Clean Air Act Amendments.

Background:

The confusing provisions, limits, and monitoring conditions of the draft permit allow for considerable negligence (and perhaps gross negligence) in the operational applications and interpretations. As ignorance of the law is no excuse, clarity and purpose of the law, enforcement, and penalties for non-compliance (=violation) should be easily recognized.

VI Provisions

VI.A.2.r p.22

- r. The CWC provides that any person who violates a waste discharge requirement or a provision of the CWC is subject to civil penalties of up to \$5,000 per day, \$10,000 per day, or \$25,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to \$10 per gallon per day or \$25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations. Violation of any of the provisions of the NPDES program or of any of the provisions of this Order may subject the violator to any of the penalties described herein, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.

The penalties provision is unclear and has been applied variably between different boards and staff. As indicated above variable fines may be imposed.

Request: We request that the WRB review/revise/provide and add to permit the following:

Simple table of:

Parameter	Cost of Violation	Cost of Non-Reporting	Cost of Falsified reports
-----------	-------------------	-----------------------	---------------------------

These should be simple administrative fines (as in parking tickets) in addition to punitive, discretionary financial penalties which would be approved on a case-by-case basis by the board.

Monthly Reporting by the Newhall Project to all basin stakeholder of performance summary, compliance, non-compliance, fines, and pending Board actions.